# *The impact of surgical time on consequence of the transposition of the great arteries repair via arterial switch operation*

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## Background

Transposition of the great arteries (TGA) is a rare but life threatening congenital heart defect that requires rapid surgery. The optimal surgical approach for simple TGA is an arterial switch operation (ASO) commonly performed shortly after birth, before the left ventricle has time to decondition (1-4).

## Aim

Assessment of the surgical results of ASO to repair TGA with focusing on the surgical time

## Methods

- *Study Design*: Retrospective study
- *Participants:* 105 infants ( 61 male, 44 female)
- *Mean weight:* 3.7±0.3 kg
- Divided into three groups:

A group: ASO during first week of life (n=33 )
B group: ASO during second week of life (n=35)
C group: ASO during third week of life (n=37 )

## Statistical Analysis

All the statistical analyses were performed using SPSS software (version22; SPSS Inc, Chicago, IL, USA). Continuous variables of the study are presented as mean ± standard deviation. One way ANOVA was used to find any statistically significant difference between these data.

## Results

**Table1**. Comparison of patients' variables before and after surgery

| Variables | A (n=33) | B (n=35) | C (n=37) | P value |
|---|---|---|---|---|
| Male/Female | 19/14 | 20/15 | 22/15 | 0.97 |
| Weight (kg) | 3.6±0.2 | 3.8±0.3 | 3.8±0.4 | 0.15 |
| PG infusion (%) | 25 (75.8) | 27 (77.1) | 30 (81.1) | 0.43 |
| Preoperative BAS (%) | 1 (3) | 5 (14.3) | 8 (21.6) | 0.07 |
| CPB time (hour) | 190.27±16.3 | 182.9±14.01 | 182.64±8.5 | 0.33 |
| ACC time (hour) | 140.36±15.1 | 142.2±24.8 | 146.91±8.3 | 0.65 |
| Days on dopamine | 1.8±0.1 | 2.4±0.08 | 2.6±0.08 | 0.001 |
| Days on epinephrine | 0 | 1.2±0.07 | 1.2±0.08 | 0.001 |
| Days on ventilator | 3.5±0.2 | 4.5±0.29 | 5.03±0.21 | 0.001 |
| ICU stay (day) | 6.6±0.21 | 8.4±0.57 | 9.7±.64 | 0.001 |

PG: prostaglandin, BAS: balloon atrial septostomy. CPB: Cardiopulmonary bypass, ACC: aortic cross-clamp, ICU: intensive care unit.

**Table2**. Comparison of postoperative complications among the groups

| Variables | A (n=23) | B (n=26) | C (n=31) | P value |
|---|---|---|---|---|
| LV dysfunction (%) | 0 | 3(8.6) | 7(18.9) | 0.02 |
| Bleeding (%) | 1(3) | 3(8.6) | 3(8.1) | 0.59 |
| Delayed sternal closure (%) | 5(15.2) | 7(20) | 7(18.9) | 0.86 |
| Sepsis (%) | 0 | 0 | 1(2.7) | 0.39 |
| Peritoneal dialysis (%) | 3(9.1) | 5(14.3) | 5(13.5) | 0.78 |
| Supra-annular PS (%) | 1(3) | 2(5.7) | 2(5.4) | 0.85 |
| Neurological disoreder (%) | 0 | 1(2.9) | 1(2.7) | 0.62 |
| Mortality (%) | 1(3) | 3(8.6) | 8(21.6) | 0.04 |

LV: left ventricle, PS: pulmonary stenosis

## Conclusion

Arterial switch operation for patients with simple transposition of the great arteries still can be tolerated beyond the first month of life. We recommend that simple transposition of the great arteries in neonates should be operated as soon as possible after birth.

## References

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